

Appl. No. 10/789,310
Reply to Office Action of July 27, 2006

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Amendments to the Specification:

Please replace the title with the following amended title:

~~ELECTRON BEAM DEPICTING METHOD, PRODUCTION METHOD OF
MOTHER DIE, MOTHER DIE, PRODUCTION METHOD OF METALLIC
MOLD, METALLIC MOLD, OPTICAL ELEMENT AND ELECTRONIC
BEAM DEPICTING APPARATUS~~

A METHOD FOR DEPICTING A DIFFRACTION STRUCTURE
ON A SUBSTRATE USING AN ELECTRON BEAM

Page 1, replace the first and second paragraphs with the following amended paragraphs:

The present invention relates to a depicting technology by an electron beam, and particularly to a depicting technology by which, ~~onto a base material which is a depicted object,~~ a predetermined pattern, for example, a diffraction pattern corresponding to an optical element is depicted on a base material.

Conventionally, ~~a CD and a DVD~~ CD's and DVD's are widely used as ~~[[an]]~~ information recording medium, ~~and for a~~. These require precision equipment such as a reading apparatus by which

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the information is read, ~~in which from these recording media,~~
many optical elements are used.

Page 1, replace the third paragraph, bridging pages 1-2,
with the following amended paragraphs:

Recently, ~~[[a]]~~ the specification or performance required
for these optical elements is ~~improved~~ increased, and
particularly, ~~[[in a]]~~ for the pick-up lens for a recording
medium such as the DVD, ~~to an~~ because of an increase ~~[[of a]]~~ in
the recording density[[,]]. These lenses use a diffraction
structure and it is therefore required that a more accurate
diffraction structure is formed. Specifically, a processing
accuracy in a scale smaller than a wavelength of the light, for
example, sub-10 nm scale, is required.

Page 2, replace the third full paragraph with the following
amended paragraph:

Up to now, the molding die is processed by ~~a common~~ usual
engineering, for ~~instance~~ example, a cutting bit ~~bite~~ of
~~processing engineering, however,~~ However, when ~~[[the]]~~ a fine

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shape such as a ~~[[such]]~~ diffraction structure is to be formed, the processing accuracy is poor, and there is a limit in the strength or life of the bit bite, ~~and it.~~ It is therefore difficult ~~that the~~ for accurate processing in the sub-micron order or in the level more accurate than that, to be ~~[[is]]~~ conducted.

Page 4, replace the penultimate paragraph with the following amended paragraph:

Hereupon, in the case of the optical element such as an ~~[[OD]]~~ CD lens, in the depicting process, because the processing accuracy in the level within several 10 s nm to the designed value is required, it is a very difficult target to realize the ~~[[more]]~~ greater accuracy.

Page 7, replace the first full paragraph with the following amended paragraph:

(6) The method of item 1, wherein the contour of the substrate, onto which the diffraction gratings are depicted, is a ~~carved~~ curved surface.